

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1.(Currently Amended) A process for producing microspheres that contain active component within polymer spheres as releasable, comprises: preparing polymer solution or dispersion having at least active agent, solvent or dispersant, and polymer; drop-wise spitting the polymer solution or dispersion into a flowing fluid, at a predetermined temperature, as to form microsphere precursors; and allowing transfer of the solvent or dispersant within the microsphere precursors to the fluid on way of transporting the microsphere precursors held in the flowing fluid, wherein the spitting of the polymer solution or dispersion is made in a manner to form a predetermined angle in a range of 45-90 degree between a flowing direction of the flowing fluid and a direction of the spitting.

2.(Original) A process for producing microspheres according to claim 1, wherein the fluid is lipophilic one if the polymer is hydrophilic; and the fluid is hydrophilic one if the polymer is lipophilic.

3. (Canceled)

4. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-3, wherein the drop-wise spitting of the polymer solution or dispersion is made continuously with low flow rate as to form the liquid drops, or intermittently by each small amount at a predetermined interval.

5. - 6. (Canceled)

7. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-6, wherein average diameter of the microspheres is in a range of ~~0.0001-5000~~ 0.1-500 micro meter.

8. (Canceled)

9. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-8, wherein the polymer is in vivo degradable and is at least one selected from a group consisting of: ~~polyvinyl alcohol, polymethyl methacrylate, polyester, polycarbonate, polyurethane, polyurea, polyamide, poly~~ alkylene oxalate, homopolymers of hydroxycarboxylic acids, copolymers of hydroxycarboxylic acids, polyamino acids, cellulose derivatives, dextran derivatives, gelatin, shellac, waxes, chitin, and chitosan.

10. - 11. (Canceled)

12. (Currently Amended) A process for producing microspheres according to claim 2~~anyone of claims 1-11~~, wherein the solvent or dispersant is at least one selected from a group consisting of: water, alcohols, esters, halogenated hydrocarbons, ethers, aromatic hydrocarbons, hydrocarbons and ketones.

13. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-12, wherein the polymer solution or dispersion has a viscosity in a range of 50-10,000cP at 25°C.

14. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-13, wherein the predetermined temperature is in a range of 4-40°C.

15. (Currently Amended) A process for producing microspheres according to claim 2~~anyone of claims 1-14~~, wherein the fluid is a liquid that is at least one selected from water, alcohols, acetone, acetonitrile and liquid paraffins, and contains a surfactant at 0.1-10 weight-per-volume (W/V) %.

16. (Currently Amended) A process for producing microspheres according to ~~anyone of claims~~ claim 1-15, wherein flow rate of the flowing fluid is a constant rate in a range of 0.1-500mL/minute.

17. (Currently Amended) An apparatus for producing microspheres that contain active agent within polymer spheres as releasable, comprises; a main body in which a fluid flows or moves; a fluid supplier that sends out liquid as the fluid so that the liquid moves or flows at a predetermined flow rate in the main body; ~~and~~ a polymer solution spitter that drop-wise spits, into the fluid, the polymer solution or dispersion having at least active agent, solvent or dispersant, and polymer, at a predetermined temperature, as to form microsphere precursors; a reservoir for the polymer microspheres at beneath of the main body; and a stirrer for stirring the liquid within the reservoir, which contains the polymer microspheres; wherein the solvent or dispersant within the microsphere precursors is transferred to the fluid on way of transportation of the microsphere precursors within the main body.

18. - 21. (Canceled)

22. (Currently Amended) An apparatus for producing microspheres according to ~~anyone of claims~~ claim 17-~~21~~, further comprising a temperature keeper by which each of the main body, the fluid supplier and the polymer solution spitter is kept at temperature in a range of 4-40°C.

23. - 24. (Canceled)

25. (Currently Amended) An apparatus for producing microspheres according to ~~anyone of claims~~ claim 17-~~24~~, wherein the spitting of the polymer solution or dispersion is made in a manner to form a predetermined angle in a range of 45-90 degree between a flowing direction of the flowing fluid and a direction of the spitting.

26. (Canceled)

27. (New) An apparatus for producing microspheres according to claim 17, wherein the main body is a column arranged as vertical or in a direction achieving downward flow of the fluid; and diameter of the column is in a range of 3-5cm when length of the column is in a range of 50-300cm.

28. (New) A process for producing microspheres that contain active component within polymer spheres as releasable, comprises: preparing polymer solution or dispersion having at least active agent, solvent or dispersant, and polymer; drop-wise spitting the polymer solution or dispersion into a flowing fluid, at a predetermined temperature, as to form microsphere precursors; and allowing transfer of the solvent or dispersant within the microsphere precursors to the fluid on way of transporting the microsphere precursors held in the flowing fluid, wherein the fluid is a liquid that is at least one selected from water, alcohols, acetone, acetonitrile and liquid paraffins, and contains a surfactant at 0.1-10 weight-per-volume (W/V) %.

29. (New) A process for producing microspheres according to claim 28, wherein the surfactant is at least one selected from a group consisting of sorbitan fatty acid ester, polyoxyethylene sorbitan fatty acid ester, glycerin fatty acid ester, polyoxyethylene hydrogenated castor oil, polyoxyethylene alkylethers, sodium lauryl sulfate, sodium oleate, sodium stearate, polyvinyl alcohol, polyvinyl pyrrolidone, lecithin, and carboxymethyl cellulose.

30. (New) A process for producing microspheres according to claim 29, wherein the polymer solution or dispersion has a viscosity in a range of 200-2000cP at 25°C.

31. (New) process for producing microspheres according to claim 29, wherein the surfactant is at least one selected from a group consisting of polyvinyl alcohol, polyvinyl pyrrolidone, and carboxymethyl cellulose.

32. (New) process for producing microspheres according to claim 29, wherein the fluid contains a surfactant at 1-3% weight-per-volume (W/V) %.

33. (New) A process for producing microspheres according to claim 28, wherein the spitting of the polymer solution or dispersion is made in a manner to form a predetermined angle in a range of 45-90 degree between a flowing direction of the flowing fluid and a direction of the spitting.

34. (New) An apparatus for producing microspheres that contain active agent within polymer spheres as releasable, comprises; a main body in which a fluid flows or moves; a fluid supplier that sends out liquid as the fluid so that the liquid moves or flows at a predetermined flow rate in the main body; and a

polymer solution spitter that drop-wise spits, into the fluid, the polymer solution or dispersion having at least active agent, solvent or dispersant, and polymer, at a predetermined temperature, as to form microsphere precursors; wherein the solvent or dispersant within the microsphere precursors is transferred to the fluid on way of transportation of the microsphere precursors within the main body; and the spitting of the polymer solution or dispersion is made in a manner to form a predetermined angle in a range of 45-90 degree between a flowing direction of the flowing fluid and a direction of the spitting.